LDM70

Fully Isolated RS-232 Line Driver

Description

The LDM70 series of products is designed to allow video display terminals (VDTs) and other RS-232 devices to be connected over distances sufficient to cover any industrial or institutional complex of buildings. These line drivers feature a rugged aluminum enclosure small enough to mount on the back panel of VDT units, saving valuable desk and floor space.

The LDM70 series is designed for full duplex, asynchronous operation over two DC-continuity, non-loaded, twisted-wire pairs. Through special high-speed optically coupled circuits, they may communicate at data rates up to 57,600 bits per second. A handshake operation is implemented over the same two-wire pairs. A self-powered model and a host-powered model are available. The self-powered unit uses 12VAC from a wall-mounted transformer, while the host-powered unit takes ±DC power from pins 9 and 10 of the RS-232 connector. The line driver circuits — and, consequently, the host device — are protected from electrical transients due to lightning strikes or operation of heavy industrial equipment.

Each device features a convenient Data-Communication Equipment (DCE) to Data-Terminal Equipment (DTE) switch which reverses pins 2 and 3 of the RS-232 connector. For installation and troubleshooting, each unit has diagnostic Light-Emitting Diodes (LEDs) on the transmit and receive lines. In addition, LEDs indicate valid carrier detect and data terminal ready.

The RS-232 connector may be ordered as a male or female 25-pin connector. Field connection is made through a modern, solderless, screw-termination assembly.

▶ Features

- DC to 57,600bps
- Complete Isolation with Optical Couplers and Power DC-to-DC Converter
- Data Terminal Ready, Carrier Detect Handshake without Extra Wires
- Surge Protectors
- Four LED Diagnostic Indicators
- Operation to 3 Miles (5km) at 9600bps, 1 Mile (1.7km) at 19,200bps, 0.5 Miles (0.8km) at 57,600bps
- Four-Wire Full Duplex, Two-Wire Simplex
- Self-Powered or Host-Powered
- Selection of Connectors
- Wide Operating Temperature Range, 0 to +70°C
- CE Compliant

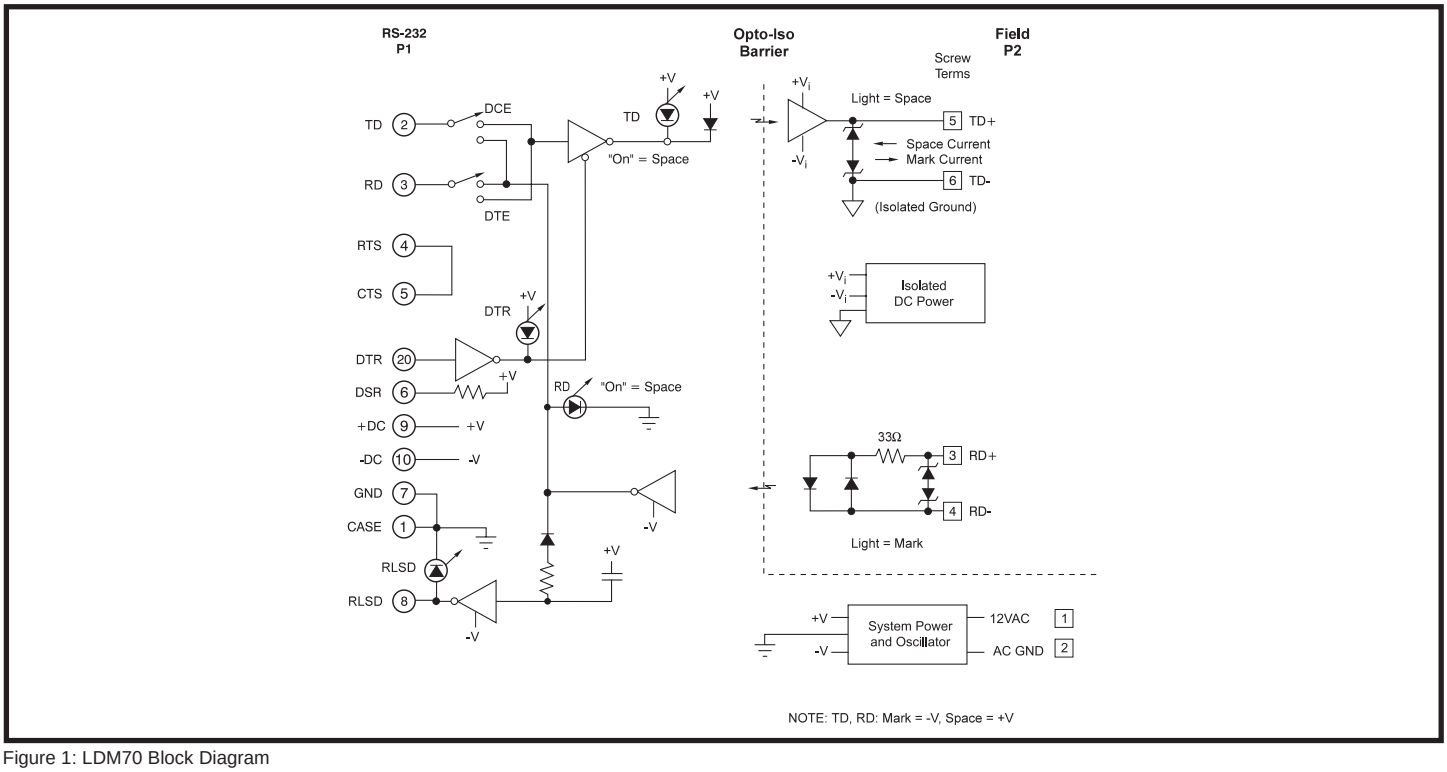

Figure 1: LDM70 Block Diagram

Specifications

Model	LDM70
Bit Rate (bps)	0-57.6k
bps vs Distance	57.6k 38.4k 19.2k 9.6k 4.8k 2.4k 1.2k-0
Distance(miles)	0.5 0.75 1.0 3.0 5.0 7.0 12.0
Distance(km)	0.8 1.21 1.6 4.8 8.1 12.9 19.3
Common Mode Isolation	Surge: 1500Vp, 1 min.
	Continuous: 1000Vrms
Differential Mode Surge Protection (3 devices)	ANSI/IEEE C37.90.1
Modes	Asynchronous 4-wire duplex, 2-wire simplex
Channel Lines(1)	TD, RD
Control Lines(1)	DTR, RLSD
Power	
AC operation(2)	12VAC at 120mA
DC operation	±9VDC to ±15VDC, 45mA
Environmental:	
Operating Temperature Range	0°C to +70°C
Storage Temperature Range	–40°C to +85°C
Relative Humidity	0 to 95% Noncondensing
Dimensions	5.7" x 2.1" x 1" (144.8mm x 53.3mm x 25.4mm)
Weight PT3 and PT3E	5.5 oz (156g) max 11.0 oz (312g) max
MTTF(3)	>100,000 hrs

NOTES:
(1) TD = Transmit Data, RD = Receive Data, DTR = Data Terminal Ready, RLSD = Received Line Signal Detect.
(2) 120VAC and 220VAC power transformers are available.
(3) Ground-benign environmental conditions (no salt atmosphere, <50°C ambient temperature).

Ordering Information

Model	Type	Power	Termination
LDM70-P	Male	Host-powered	Screw termination
LDM70-S	Female	Host-powered	Screw termination
LDM70-PT	Male	U.S. transformer	Screw termination
LDM70-ST	Female	U.S. transformer	Screw termination
LDM70-PE	Male	European transformer	Screw termination
LDM70-SE	Female	European transformer	Screw termination

Model	Description
PT3	U.S. style wall mount transformer, 120VAC
PT3E	Euro style wall mount transformer, 220VAC

RS-232 P1 Pin Descriptions				Field P2 Pin Descriptions
				Screw Terms
Pin 1	CASE		Ground	Pin 1 12VAC
Pin 2	TD	[3]	Transmit Data	Pin 2 AC GND
Pin 3	RD	[2]	Receive Data	Pin 3 RD+
Pin 4	RTS	[7]	Req. To Send	Pin 4 RD-
Pin 5	CTS	[8]	Clear To Send	Pin 5 TD+
Pin 6	DSR	[6]	Data Set Ready	Pin 6 TD-
Pin 7	GND	[5]	Signal Ground	
Pin 8	RLSD	[1]	Receive Line Signal Detect	RD+ = Receive Data +
Pin 9	+DC		Positive DC Supply Input	RD- = Receive Data -
Pin 10	-DC		Negative DC Supply Input	TD+ = Transmit Data +
Pin 20	DTR	[4]	Data Terminal Ready	TD- = Transmit Data -

Pin numbers given are for the 25-pin connector with the 9-pin equivalent in [ ].

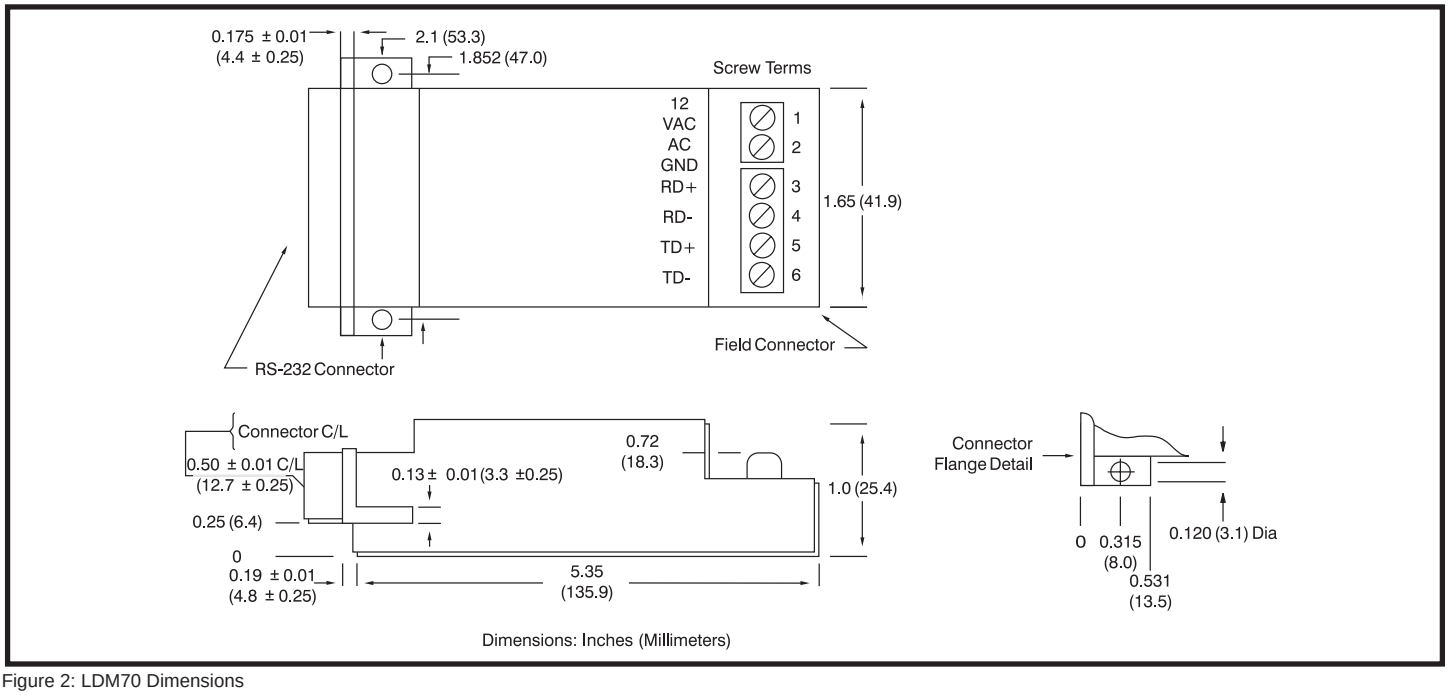

Figure 2: LDM70 Dimensions